REMARKS

Claims 29 and 31-38 were previously pending in the present application. No claims are currently canceled, and new claim 49 is currently added. Thus, claims 29, 31-38 and 49 are currently pending in the present application.

Reconsideration of this application in light of the above amendments and the following remarks is respectfully requested.

Rejection under 35 U.S.C. §103: Queyssac in view of Uedaira

The Examiner has rejected claims 29, 31-33 and 36-38 under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 5,089,877 to Queyssac ("Queyssac") in view of U.S. Patent No. 4,585,718 to Uedaira, et al. ("Uedaira"). In so doing, the Examiner asserts that Queyssac discloses all of the elements of claim 29 except for the cell composition recited in claim 29. The Examiner further asserts that the cell composition recited in claim 29 is disclosed by Uedaira. However, Applicant respectfully asserts that neither allegation is accurate, for at least the following reasons.

For example, the Examiner asserts that Queyssac discloses an integrated circuit die 12 coupled to a first surface of a "central support member" 52 of a lead frame 20. However, the element referenced by reference numeral 52 in Queyssac is not a central support member of the lead frame 20. In contrast, it is a ceramic substrate 52 which is a discrete component separate from the lead frame 20. The ceramic substrate 52 and the lead frame 20 are not integral, and are not in contact, and are actually separated and isolated from one another by the battery 32. Moreover, Queyssac fails to disclose that the integrated circuit die 12 can be coupled directly to the only arguable "central support members" of the lead frame 20 that is disclosed in Queyssac, that being the tie bar segments 28A and 28B. In contrast, Queyssac only discloses embodiments in which the integrated circuit die 12 is coupled to the ceramic substrate 52 or the negative terminal 32N of the battery 32, and not to any portion of the lead frame 20. Thus, Queyssac fails to disclose an integrated circuit die coupled to a first surface of a central support member of a lead frame assembly, as recited in claim 29. Moreover, Uedaira fails to cure this shortcoming of Queyssac. Thus, for this reason alone, the combination of Queyssac and Uedaira fails to support a *prima facie* case of obviousness of claim 29.

Moreover, even if the Examiner's allegation that the ceramic substrate 52 is part of the lead frame 20 is true, a subsequent allegation by the Examiner would be inaccurate. That is, the Examiner further alleges that Queyssac discloses that the lead 28 has a shape configured to position a terminus of wirebond

34P in a reference plane that is coincident with the surface of the ceramic substrate 52 to which the integrated circuit die 12 is coupled. However, it is clear from Queyssac's Fig. 10 that this is not true. As shown in the Fig. 10 below, the terminus of wirebond 34P (and, actually, all other wirebonds 34, including wirebond 34V) is clearly positioned below the reference plane that is coincident with the surface of the ceramic substrate 52 to which the integrated circuit die 12 is coupled. Moreover, Uedaira fails to cure this shortcoming of Queyssac. Thus, for this reason alone, the combination of Queyssac and Uedaira fails to support a *prima facie* case of obviousness of claim 29.

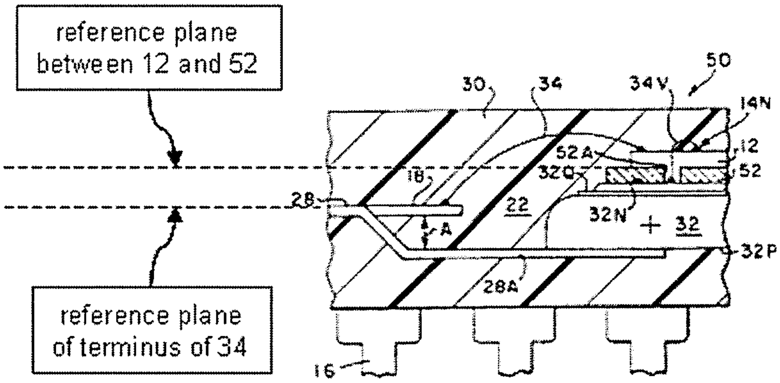
reference plane between 12 and 52
reference plane of terminus of 34
30
34
34V
50
14N
12
52A
52
32Q
18
28
22
32N
32
32P
A
28A
16

FIG. 10

The Examiner further asserts that the cell composition recited in claim 29 is disclosed by Uedaira. According to claim 29:

- the cathode layer includes manganese dioxide doped with a first impurity type;
- the separator layer includes lithium perchlorate; and
- the anode layer includes lithium doped with a second, opposite impurity type.

In this context, Uedaira merely discloses that the cathode can comprise β-MnO_2, the separator can include lithium perchlorate, and the anode can comprise metal lithium. That is, Uedaira fails to disclose that:

- the cathode layer is doped with a first impurity type; and
- the anode layer is doped with the second, opposite impurity type.

Nonetheless, the Examiner has also asserted that these elements would have been obvious to one of ordinary skill in the art since it has been held that the selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination.

In making this assertion, the Examiner points to MPEP §2144.07, which explains that use of a material that is recognized in the art as having suitability for an intended purposes can support a *prima facie* obviousness determination. However, the Examiner has not shown that doped manganese dioxide is recognized in the art as having suitability for a cathode layer in a solid state power cell. The Examiner has also not shown that doped lithium is recognized in the art as having suitability for an anode layer in a solid state power cell. The Examiner has also not shown that oppositely doped materials are recognized in the art as having suitability for cathode and anode layers in a solid state power cell.

In *Sinclair & Carroll Co. v. Interchemical Corp.*, claims directed to a printing ink solvent having the vapor pressure characteristics of butyl carbitol were held invalid over the combination of:

- a reference teaching a printing ink made with a different solvent,
- an article which taught the desired vapor pressure characteristics of a solvent for printing inks, and
- a catalog teaching the vapor pressure characteristics of butyl carbitol.

Thus, when combined, the invalidating references actually taught the claimed limitation that the printing ink solvent could have the vapor pressure characteristics of butyl carbitol.

In contrast, in the present case, the Examiner has not shown that doped manganese dioxide is recognized in the art as having suitability for a cathode layer in a solid state power cell, that doped lithium is recognized in the art as having suitability for an anode layer in a solid state power cell, or that oppositely doped materials are recognized in the art as having suitability for cathode and anode layers in a solid state power cell. To establish *prima facie* obviousness of a claimed invention, **all the claim limitations must be taught or suggested by the prior art**. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). As noted by the court in *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970), the notice of facts beyond the record which may be taken by the Examiner must be "capable of such instant and unquestionable demonstration as to defy dispute" (citing *In re Knapp Monarch Co.*, 296 F.2d 230, 132 USPQ 6 (CCPA 1961)). In the present case, the Examiner has not provided such instant and unquestionably demonstration that doped manganese dioxide is recognized in the art as having suitability for a cathode layer in a solid state power cell, that doped lithium is recognized in the art as having suitability for an anode layer in a solid state power cell, or that oppositely doped materials are recognized in the art as having suitability for cathode and anode layers in a solid state power cell. **It is never appropriate to rely solely on "common knowledge" in the art without evidentiary support in the record.** *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697.

Thus, Uedaira fails to cure the shortcomings of Queyssac, because Uedaira, like Queyssac, fails to teach or suggest that:

- the cathode layer includes manganese dioxide doped with a first impurity type;
- the separator layer includes lithium perchlorate; and
- the anode layer includes lithium doped with a second, opposite impurity type.

In view of all of the above, it is clear that the combination of Queyssac and Uedaira fails to teach or suggest each and every element recited in claim 29 of the present application. Accordingly, Applicant respectfully requests the Examiner withdraw the §103 rejection.

The Examiner also points to paragraph 0023 of the present application, alleging that it provides that "[Applicant's] invention is 'not limited to any particular doping scheme.'" However, the portion of paragraph 0023 to which the Examiner has referred provides that "...the present disclosure is not limited to any particular doping scheme...." It is clear that the Examiner is mistaken in his interpretation of this provision of paragraph 0023. That is, the present "invention" and the present "disclosure" are not necessarily the same. Moreover, the claims of a patent application do not necessarily encompass each and every embodiment within the scope of the specification of the patent application.

Rejections under 35 U.S.C. §103: Queyssac in view of Uedaira and Notten

The Examiner has rejected claims 34 and 35 under 35 U.S.C. §103 as being unpatentable over Queyssac in view of Uedaira and U.S. Patent No. 6,346,343 to Notten, et al. ("Notten"). However, Notten fails to cure the above-described shortcomings of the combination of Queyssac and Uedaira. For example, Notten, like Queyssac and Uedaira, fails to teach or suggest one or more of: (1) an integrated circuit die coupled to a first surface of a central support member of a lead frame assembly; (2) a terminal having an arcuate shape configured to position the second terminus of a second wire bond in a reference plane that is coincident with the first surface of the central support member of a lead frame assembly; and (3) a power cell having a doped manganese dioxide cathode layer and an oppositely doped lithium anode layer, at least in the context of claim 29. Consequently, the combination of Queyssac, Uedaira and Notten fails to support a *prima facie* case of obviousness of claim 29 or its dependent claims 34 and 35. Accordingly, Applicant respectfully requests the Examiner also withdraw these §103 rejections.

New Claim 49

Queyssac, Uedaira and Notten also fail to support a *prima facie* case of obviousness of new claim 49 because, whether taken separately or together, the references fail to teach or suggest the combination of:

- a conventional lead frame having an industry-standard geometry and composition and including:
    - a central support member;
    - a plurality of formable, flexible metal leads that extend radially around the periphery of the central support member to a plurality of connectors; and
    - a conductive coating located on the central support member;
- a laminated, solid polymer, rechargeable power cell having a thickness ranging between about 500 microns and about 1000 microns, the power cell including a plurality of laminated layers and a four-sided, open-ended carrier structure surrounding the plurality of laminated layers, wherein the plurality of laminated layers includes:
    - a cathode layer impregnated with conductivity-enhancing impurities and having a thickness ranging between about 300 microns and about 750 microns;
    - an anode layer comprising a lithium-impregnated metal and having a thickness ranging between about 30 microns and about 100 microns; and
    - a solid electrolyte separator interposing the cathode layer and the anode layer and comprising lithium perchlorate and polyvinylidene ($LiClO_4$-PVDF);
    - wherein a first one of the cathode layer and the anode layer is coupled to a first major surface of the central support member;
- an integrated circuit die having a plurality of bond pads and coupled to a second major surface of the central support member opposite the power cell;
- an electrode including:
    - a substantially planar body having a thickness ranging between about 500 microns and about 1000 microns, a width ranging between about 7,500 microns and about 10,000 microns, and a length ranging between about 7,500 microns and about 10,000 microns, wherein a second one of the cathode layer and the anode layer is coupled to the body;
    - a terminal integral to the body;
    - a conductive coating located on a first side of the body and a first side of the terminal; and
    - an insulating layer located on a second side of the body and a second side of the terminal, wherein the second side of the body is opposite the first side of the body, and wherein the second side of the terminal is opposite the first side of the terminal;
- a plurality of first wire bonds coupling ones of the leads to corresponding ones of the plurality of bond pads;
- a second wire bond coupling one of the plurality of bond pads to the terminal, whereby an arcuate shape of the terminal positions a terminus of the second wire bond in a reference plane that is substantially coincident with a surface interface between the central support member and the integrated circuit die; and
- an insulating layer encapsulating the electrode, the power cell, the central support member, the integrated circuit die, the plurality of first wire bonds, and the second wire bond.

Conclusion

It is clear from all of the foregoing that independent claims 29 and 49 are in condition for allowance. Dependent claims 31-38 depend from and further limit independent claim 29 and, therefore, are allowable as well. It is believed that all matters set forth in the Office Action have been addressed, and that claims 29, 31-38 and 49 are in condition for allowance. Favorable consideration and an early indication of the allowability of the claims are respectfully requested. Should the Examiner deem that an interview with Applicant's undersigned attorney would expedite consideration, the Examiner is invited to call the undersigned attorney at the telephone number indicated below.

Respectfully submitted,

Dave R. Hofman
Registration No. 55,272

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HAYNES AND BOONE, LLP
901 Main Street, Suite 3100
Dallas, Texas 75202-3789
Telephone: 713/547-2523
IP Facsimile: 214/200-0853

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Susan D. Jones

Susan D. Jones